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ABSTRACT

The purpose of this journal, addressed specifically to educators, is to describe, introduce, or translate results of research and development work funded by the National Institute of Education. The first article examines two secondary schools that are undertaking comprehensive efforts to improve their practices with help from the Wisconsin Research and Development Center for Individualized Schooling. Major emphasis is being placed on Individually Guided Education, with the local school staff engaging in ongoing educational improvement. Curriculum, instruction, and school organization are arranged to facilitate the continuous progress of each student. In the second article new developments in the use of computers in the classroom are discussed. Ways in which a computer can be of service in various school functions are described, and the problems as well as benefits involved in developing computer assisted instruction are explored. In the last article, a researcher discusses teacher education. Particular consideration is given to the problems of the beginning teacher and the first year experience. It is recommended that active participation of more experienced teachers in assisting beginners be formalized as regular practice. (JD)

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Secondary Schools Stop Babysitting

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EXCUSE US, WHILE WE CHANGE OUR APPEARANCE.

The first lesson taught in Magazine Editing 202, after the one on how to string two sentences together, is titled: "Don't fool around with a winning format."

When we first designed the *Educational R&D Report* nearly three years ago, we figured we had a look that would rival *Readers' Digest* in familiarity. Trouble is, we got tired of it first.

The old format made our readers work too hard. The columns were too wide, thus making otherwise easy copy difficult to read. (Journalists read research reports, too. And one study informed us that our line length exceeded what the experts claim is a "readable" number of words and characters for one line of type.)

So readability became a concern. In addition, the old format limited our creative talents. After all, there's just so much you can do with a 7 inch-wide page. Our new, more conventional format, should explode our design team's creative talents.

And we heard a few complaints from our readers about the inconvenience of storing a publication that doesn't lend itself to standardization. For example, when placed on a shelf, it tends to slip in deeper than its neighbors and thus disappear. When put into a file folder, it plunks to the bottom of the drawer and hides.

Thus for all the reasons cited, plus a few more that tend to become quite technical, we're pleased to introduce you to our new, improved *Educational R&D Report*.

As long as we're talking about ourselves, perhaps one or two of our readers would be interested in knowing more about us, our sponsors, and our purpose. We explained all this when we introduced the first issue of the magazine two years ago. But since then our initial subscription list of 6,000 has grown to about 15,000. So most of you have missed the explanation; many of you earlier readers, we suspect, probably have forgotten.

Our purpose is simple and rather modest. The *Educational R&D Report* intends to acquaint a fairly select group of educators with the outcomes of federally funded educational research and development. The Council for Educational Development and Research (CEDaR) publishes the magazine; the bills are paid by CEDaR-member institutions, the regional laboratories and r&d centers, through funding provided to them from the National Institute of Education.

If that arrangement sounds confusing, accept our assurances that it really isn't. We simply attempt to describe, introduce, or translate some of the results of NIE-funded r&d work underway at the CEDaR-member institutions. Occasionally we come across something else that excites us, even though NIE's money never played a part. If it's good, and we believe you'll be interested, we run an article about it.

We don't publish an academic journal, although the contents describe some of the most scholarly work underway in educational research and development. No, we produce a magazine written by educational journalists, a small group of individuals trained to write newsworthy copy about scientific undertakings. We've got a few of them on staff; others, you'll notice from time to time, come to us from daily newspapers and other research and development institutions.

Although we don't accept manuscripts, we do encourage letters to the editor. We haven't published any for awhile because they were too complimentary (honest) and some of our sponsors accused us of wallowing in self-aggrandizement. But don't let that deter you; we like your letters, critical or not. And we promise to run those that comment on the substance of articles.

We don't know how long we'll continue to publish the *Educational R&D Report*. That's the nature of this business. But we'll be here for at least three more issues and longer, we suspect, if the magazine continues to convince its sponsors and you, its readers, that it serves a purpose.

Secondary Schools Stop Babysitting

and Begin Teaching Basics

Mary Saily

teuben Middle School in Milwaukee, Wis., and Webster Transitional School just up the road in Cedarburg are as different as any two schools in America.

Steuben is an integrated urban school housed in a three-story, depression-era building. Its student body of 920 kids is 56 percent black, 9 percent Hispanic, and 2 percent American Indian, with whites accounting for the remaining 33 percent. The turnover rate is high — only 20 to 30 percent of the students return to the school each year.

The 700 students at Webster Transitional School, in contrast, tend to enter at sixth grade and leave at the end of eighth. They come mostly from upper-middle class white homes, although the range runs from welfare families to millionaires. The roomy, open-spaced building sits on several acres of land on the edge of town.

Mary Saily is editor of Educational R&D Report.

But despite their differences, these schools are both undertaking comprehensive efforts to improve their practices with help from the Wisconsin Research and Development Center for Individualized Schooling, University of Wisconsin — Madison.

The schools are part of a secondary education improvement project headed by Herbert Klausmeier, professor of educational psychology and a member of the Wisconsin Center's associated faculty. His project, funded by the National Institute of Education, has three components: research on improvement strategies; coordination of a nationwide network of innovative secondary schools; and development of materials to assist school staffs in their improvement activities.

he effort is an extension of Klausmeier's earlier work with elementary schools. From its inception in 1964 through 1972, he directed the Wisconsin Center. During this period, he was the primary force behind the development of Individually Guided Education (IGE). IGE is an approach to elementary schooling by which the local school staff engages in ongoing educational improvement. Curriculum, instruction, and school organization are arranged to facilitate the continuous progress of each student.

For the past several years, Klausmeier and his colleagues have been working with secondary schools to apply similar improvement strategies in those settings. Their first concern is increasing basic skills development.

"Too many kids go through junior high and high school without achieving the skills they need to function well in adult life," says Klausmeier. "By attending to each student's learning characteristics and needs, and then planning and carrying out appropriate educational activities, schools can ensure that all students continue to develop educationally through high school."

But arranging individual educational programs is a difficult task for secondary schools. "Such an effort requires more flexibility than most school struc-

tures presently afford," says Klausmeier. "Because of subject matter specialties, size, and other factors, staff members find it difficult to get together to plan significant educational improvements."

To learn more about curricular, instructional, advising, and organizational arrangements that facilitate continuous progress in secondary students, Klausmeier is conducting cooperative research with five schools. Steuben and Webster are among them. The others are Cedarburg (Wis.) High School, Hood River Valley (Ore.) High School, and Carl Sandburg Junior High School, Mundelein, Ill.

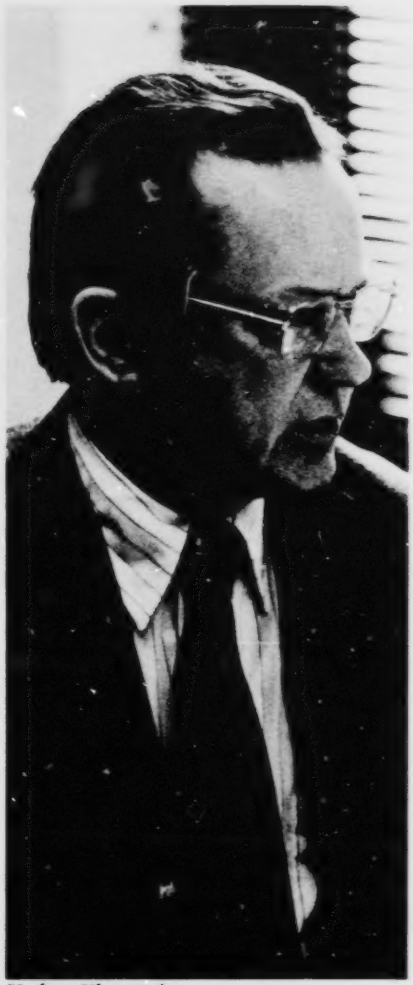
In these schools, groups of students and teams of teachers are organized into smaller units or "schools-within-the-school." While each school's particular organization for instruction and student advising differs, all include shared decision making by administrators, teachers, counselors, and students. And in each instance, mechanisms have been devised for planning and carrying out educational improvement activities.

teuben Middle School, for example, is organized into 3 units of 2 teachers and 60 students each, and 6 units of 4 teachers and 120 students each.

All sixth graders in the school participate in the two-teacher units. The teachers are certified as "upper elementary" and teach all subjects. Some seventh graders also are included in these units.

The rest of the seventh graders and all eighth graders participate in the larger units. One unit includes students from both grades, while the others are single-grade units. The four teachers in each unit are certified with specialties in math, English, and social studies and either reading or science.

Donald Luebke, Steuben's principal, explains differences among the units. "Our sixth grade kids come from about 60 different elementary schools in the city," he says. "Most of these schools are traditionally organized, and the smaller units seem to provide a better transition for these kids.



Herbert Klausmeier

"In addition to size, our units differ in their instructional approaches," he continues. "Some are more structured and provide continuing direction for students, while others are more open and encourage self-directed learning.

"We place each student in the unit that seems best suited to his or her learning style and needs. Parents participate in this decision."

In fact, parents are actively involved in unit activities. They attend daily meetings of unit teachers on a "drop-in" basis. Each morning, teachers from each unit meet for one class period to plan and review instructional activities and share information about student progress.

"With several teachers attending to the needs of each student, none of our 920 kids has a chance to fall through the cracks," says Luebke. "If these kids are going to make it anywhere, they'll make it here."

Special education teachers and their students with special needs, by the way, are integrated into the nine academic units. In addition to these units, Steuben's industrial arts, music, art, physical education, and home economics teachers are organized into three teams. These teachers work with the academic units to plan instruction for students.

Each specialist and academic team is represented on an instructional improvement committee. Together with the principal, other administrative staff, and student and teacher union representatives, they meet weekly to set school-wide objectives, review overall operations, and plan improvements.

"Sharing decision making has enhanced my leadership position in the schools," claims Luebke. "This way, the school and its programs belong to all of us. And, more important, group decisions are more informed than individual ones and result in better educational programs for our students."

om Pautsch, principal at Webster Transitional School, agrees. He also shares decision-making responsibility with his staff. In fact, Webster's organization is similar to Steuben's. But curricular, instructional, and advising strategies are more structured.

Webster is divided into eight learning pods of 75 to 100 students. Five of the pods consist of sixth and seventh grade students while three are restricted to eighth grade. The three or four teachers in each pod are responsible for instructing students in language arts, reading, math, social studies, and science.

Two other teacher teams cooperate with pod teachers to plan instruction. An allied arts team is made up of industrial education, home economics, arts, music, and physical education teachers. A support team consists of the instructional materials center director, two guidance counselors, a reading consultant, and three special education teachers. Special education

students are integrated into the pods and receive most of their instruction with other students.

The pod teachers meet daily to plan and evaluate instructional activities. An instructional improvement committee, similar to the one at Steuben, also meets weekly.

"The pods take similar approaches to instruction," says Pautsch. "The philosophy is to help each student progress at an appropriate rate, engage in a mix of group and independent learning experiences, and develop a sense of social responsibility."

This philosophy, as well as the scope and sequence of the reading and mathematics curriculum, are extensions of K-6 instruction in Cedarburg. The community's elementary schools use the IGE approach to instructional improvement, and a record of progress in reading and math follows each student to middle school.

As a consequence, Webster's teachers know exactly where students are in their academic development in these basic subjects. This continuity frees them to spend more time on other aspects of student growth.

Each teacher meets twice a week with a group of 15-18 student advisees. During these meeting, students deal with such issues as goal setting, decision making, values clarification, and career awareness. The emphasis is on developing a sense of personal responsibility.

"We teach our kids that freedom goes hand-in-hand with responsibility," says Pautsch. "The only rule of the school is 'respect the rights of others.' And the fact that we have no locks on our student lockers — and no theft — shows we're succeeding.

"The stability and support of our community is an important factor in this effort," he notes. "Pride in the school is simply an extension of community pride."

The stability at Webster is in sharp contrast to the mobility of Steuben's kids. Despite these and other differences, however, the two schools show remarkable similarities in how they arrange an individual educational program for every student.

That's not surprising — both schools are working closely with the Wisconsin Center in developing their own improvement strategies. Nevertheless, other participating schools differ markedly from Steuben and Webster in their organizational arrangements and related approaches to improvement.

Cedarburg High School, for example, offers three alternative programs for its students. One provides basic skills and career education instruction for students with academic and attitudinal problems; about 30 students enter this program each year. The second alternative is organized much like Webster with continuous progress, groups of 100 students per grade, and teams of four academic teachers. The school's third alternative continues a traditional program of high school classes for the other 200 students per grade.

"There's no one right way for secondary schools to organize their students and staff to meet the needs of kids," says Klausmeier. "High schools especially require flexibility. In our cooperative research we're examining alternative strategies that work well for different schools and communities. At the same time, we're working with schools to find ways they can solve their problems and refine their practices."

Another important aspect of this cooperative effort is the development of local school evaluation strategies. "We're helping the five cooperating schools develop evaluation strategies that enable them to obtain information for planning their own improvements," explains Klausmeier.

The main idea is to obtain appropriate evaluation information the first year. Based on this information, then, individual students and groups of teachers set their goals for the next year. When this process has been carried out for two years, cumulative data are available for planning long-term educational improvements.

Tom Pautsch admits that such a self-evaluation process was threatening to Webster's staff at first. "But we've learned that it's a valuable tool for improving instruction," he states. "We now have an organized approach for examining what we're doing."

Webster uses locally developed tests to measure student progress. Steuben employs both standardized and teacher-made tests.

"Our math teachers have taken the lead in developing their own tests based on our school's objectives," says Luebke. "Our work with the Wisconsin Center provides the impetus for this activity.

"The tests are given in the fall and spring. We use the information to plan instruction and to modify our programs. For example, we now run a math lab to provide special instruction for low achieving students. As a consequence, math achievement has increased significantly."

Klausmeier notes that many schools working with the Wisconsin Center initiate improvements in one curricular area at a time or with one group of students. "The improvement of secondary schooling by a local staff doesn't happen quickly," he states.

"Making significant improvements in teaching and learning for all kids in the school requires continuous modifications and refinements in organizational arrangements, instructional strategies, decision-making patterns, curricular patterns, and other school components," he continues. "But we're finding that it works best to take time to plan and to set realistic goals and priorities, and not to tackle the whole job at once.

"And there's no one right way to begin. The schools participating in our nationwide network are going about improvement in different ways and at different rates."

The loosely organized network of innovative secondary schools consists of about 100 middle, junior high and senior highs in 19 states. Representatives of these schools meet once a year, at their own expense, with Wisconsin Center researchers to exchange ideas and engage in problem solving discussions. A booklet that profiles network schools is prepared and distributed periodically.

"Through this network we've established a community of practitioners

and scholars committed to the improvement of secondary education," explains Klausmeier. "The goal is to share information about programs, approaches, and problems as well as to enable practitioners to modify and refine their practices."

In cooperation with teachers and administrators in the network, Klausmeier has formulated a design for the improvement and renewal of secondary education. The design reflects a synthesis of research and development and incorporates suggestions from recent secondary school reform panels and commissions. It consists of ten comprehensive objectives that local staffs can use to guide their improvement efforts.

Each objective relates to a major component of a secondary school. And each has two parts: a continuing objective that a school may attempt to achieve at successively higher levels over a period of years, and illustrative "enabling" objectives to be achieved during shorter time intervals. The continuing objectives are listed (see box).

"The assumption underlying the design is that a maximum amount of improvement can be made by working toward achievement of all the continuing objectives," says Klausmeier. "But schools are expected to achieve them in different ways. Thus, the illustrative enabling objectives can be modified to meet local conditions."

In fact, Klausmeier and his colleagues are producing printed and audiovisual materials that explain the concepts related to each objective and present a variety of related practices. These materials are intended for use in local staff development and university classes. For most of the objectives there is now a chapter of a book, a filmstrip, and an audiocassette in which school staff members describe their practices. Other items being prepared are: a learning guide for teachers and college students; a college instructor's manual; and two staff development guides, one for middle and junior high schools and the other for senior highs.

The materials illustrate alternative strategies for attaining the 10 objectives. For example, the filmstrip and materials on work and community learning experiences describe programs in Cedarburg, Denver, Hood River, and Milwaukee.

The materials will be completed by the end of June 1980. Klausmeier plans to field test their use in local staff development programs and university classes during the 1980-81 school year.

"Starting this summer, we're conducting invited workshops for representatives from regional educational laboratories and a few other organizations," he explains. "These individuals, in turn, will work with regional, state, or local education agencies in secondary school improvement efforts.

"Because most local staff development leaders need help in planning and conducting school improvement activities, we're planning to make the materials available as part of the workshop training," Klausmeier notes.

To find out more about this school improvement strategy and the workshops, contact Herbert Klausmeier at the Wisconsin Center, 1025 W. Johnson St., Madison, WI 53706.

Copies of *Profiles of Innovating Secondary Schools* are available for $4.95 from the Center Document Service at the same address.

R&D

10 Objectives for Improving Secondary Education

On the basis of his work with secondary schools, Herbert Klausmeier has formulated 10 objectives for schools to pursue as they attempt to improve learning opportunities for all students. Schools employ alternative strategies in reaching the general, or continuing, objectives listed below.

1. Educational Programming for the Individual: A total educational program of course work and other activities is arranged for each student that satisfies his or her developmental needs and characteristics, and meets district and state requirements.

2. Curricular Arrangements: A comprehensive and flexible curriculum is developed so that an appropriate individual educational program can be arranged for each student.

3. Work and Community Learning: Work experience and participation in other community activities are included in the educational program of each student who can profit from them, particularly at the high school level.

4. Evaluation: The individual student's progress toward his/her objectives, the student's instructional program in each course, the student's total educational program, and the school's program are evaluated systematically.

5. Student Decision Making: Students progressively assume more responsibility for planning, implementing, and evaluating their programs and activities, with a lesser amount of adult direction and control.

6. Administrative Arrangements: The school's administrative arrangements provide for cooperative planning and share decision making by the persons responsible for implementing these plans and decisions, mainly administrators, counselors, teachers, and students.

7. Organization for Instruction and Student Advising: The school is organized into reasonable-size units or groups in such a way that an effective educational program is arranged for the individual student and advising is personalized.

8. Home-School-Community Relations: Effective communication and cooperative educational efforts are carried out between the school and the community, particularly with parents.

9. Internal and External Support: The environment for learning and instruction in the school, and for work and other experiences in the community, is enriched through intellectual, technical, and material support provided by the school and district and by external agencies, such as the state education agency, teacher education institutions, regional educational laboratories, and professional associations.

10. Continuing Research and Development: Student learning and personality development, instruction, administrative arrangements, and other aspects of the educational environment become better understood and are improved through continuous research and development conducted by school personnel and cooperating individuals and agencies.

Students' New Classmates Revolutionize Education

Linda Shalaway

Millions of students in schools across the nation have new classmates these days, and they're not the typical human kind. They're computers — or more specifically, microcomputers, those small, easily affordable alternatives to the large computers first available. From Eskimo village schools to large urban districts, the microcomputer revolution is sweeping the country, and schooling will never be the same.

With brightly colored words, symbols, and messages on television-like screens, microcomputers drill students in mathematics, reading, language arts, and other subjects. They simulate science experiments and historical events. They score and keep track of students' responses to questions and problems.

And that's not all. Teachers use them to score tests, keep detailed records on individual students, and diagnose learning problems. In the central office, microcomputers keep track of class scheduling, school budgets, and much more.

NWREL starts clearinghouse

The number of uses for computers in schools is endless, and so is the number of commercially and privately developed computer programs and curricula. To help educators determine which programs are best for their schools, the Northwest Regional Educational Laboratory (NWREL) is establishing a clearinghouse for computer-based educational materials. The clearinghouse, funded by the National Institute of Education, is scheduled to begin providing services in fall 1980.

"With the recent explosion of microcomputers into schools, there is an unprecedented increase in the need for information, support, and technical assistance," explains Judith Edwards, director of NWREL's Computer Technology Program and designer of the new clearinghouse.

"Many of the programs and curricula for computers being sold today are just plain awful," Edwards continues, cautioning that schools have to be aware of fly-by-night outfits trying to make a fast profit. "But computers are being used regardless of whether or not computer-assisted materials of high quality are available. Some review, evaluation, and upgrading of these materials is needed."

The clearinghouse, called MicroSIFT (Microcomputer Software Information for Teachers), will emphasize the distribution of high quality programs at the pre-college level. Criteria are being developed to separate the good programs from the bad.

Why the sudden demand for computers and computer-assisted instruction?

Schools are in the middle of a computer revolution that started in 1977. That's when the public was first introduced to the PET microcomputer, Edwards explains. At $595, the small self-contained PET was a far cry from the large, expensive computers first introduced into schools in the 1960s.

Large computer systems, according to Edwards, cost thousands or even hundreds of thousands of dollars to install and maintain. They consist of a series of terminals hooked up by telephone line to a central computer located off the premises. The initial cost of the terminals is high, and so is the continuing cost of purchasing computer time.

"The high cost of these computers is prohibitive to many schools," says Edwards. "High cost is one reason why instructionally attractive programs based on larger systems, such as PLATO, have not been widely implemented."

Also, if anything ever happens to the main computer, all of the terminals are affected.

The microcomputer, on the other hand, is self-contained. It has the keyboard, display unit, and computer all in one package the size of the terminal it replaces. Programs to run microcomputers are contained on record-like floppy disks or cassettes. An entire beginning system can be purchased for under $1,000, says Edwards, although microcomputers performing more complex functions approach $2,500.

Computers play many roles

Now that computers are easily affordable, schools are buying and using them in record numbers.

In 1979, NWREL surveyed the school superintendents of six states — Alaska, Hawaii, Washington, Oregon,

Linda Shalaway is an editor at Michigan State University.

"Children working with the computer proceed at their own rate and interact with the computer on an individual basis, even being addressed by name."

Montana, and Idaho—and found 96 percent of them expect to be using computers for instruction or administration or both by 1982. In Oregon alone, Edwards reports, 54 percent of the school districts are already using computers in instruction.

"And the rest of the country is following this trend, too," she notes. "PTA's are selling cakes and beef jerky to buy computers for their schools."

The computer, either a micro unit or the larger variety, can serve many different functions in schools. Most dramatic, perhaps, is its use as an instructional tool.

In drill-and-practice exercises, the computer flashes a question on the screen and the student responds either by typing in the correct answer on the keyboard, or by selecting the correct answer from several possibilities displayed on the screen. If the answer is correct, many programs respond with big bold messages like "Wow, you did it!" or "That's great, Cindy." A wrong answer usually elicits a response like "Oops" or "Try again." Many programs keep track of students' scores and progress. Special printing units attached to the computer can give students copies of their work.

Drill-and-practice exercises are available for many subjects, but seem especially popular for mathematics. Students proceed through one or more series of exercises in sessions that typically last 10 to 30 minutes.

Providing basic information is another way computers can be used in instruction. Information can be presented visually on the screen, or orally through special audio units. After reading or listening to a social studies lesson about the economy or Alaska, for example, a student answers questions based on the new information presented.

Computers can also illustrate concepts. A lesson developed at the Computer-Based Education Research Laboratory, University of Illinois at Urbana/Champaign, illustrates the concept of fractions by depicting balloons at various points along a number line. When a student types in a fraction or decimal, a dart appears on the screen and moves toward the balloons. To hit certain ballons, the student must have the correct notion of the size of fractions.

Physics program simulates concepts

"But the most exciting form of computer-assisted instruction is simulation," says Edwards. "That's what really turns kids on."

In science, computers can simulate dangerous experiments, for instance, those involving radioactive decay; long-term experiments, for example, genetics; or experiments for which necessary equipment or skills are lacking. They can also simulate social phenomena such as population dynamics or election results, and historical events such as the Civil War.

"These are things that students couldn't possibly manipulate in real life," says Edwards. She points out that through computer simulations, students learn the process of discovery. Computers allow them to explore the question "What if?" by making it possible to manipulate factors and simulate the same event in many different ways.

A simulation developed at the Learning Research and Development Center (LRDC), University of Pittsburgh, for example, allows students to observe principles of physics in a frictionless world. With a visual display on a microcomputer screen, students can compare the movement of objects on an inclined plane in both the real world and one without friction.

Researchers are experimenting with these simulations in middle schools, to see whether they can be used to overcome the incorrect concepts many students have about physics, according to Audrey Champagne, an LRDC research associate.

"When kids can compare the movement of objects in different worlds," says Champagne, "they begin to realize that things like friction play a great part in the real world.

"But the computer simulation is only the first step," she continues. "It's up to the kids to experiment with the simulations and test their own concepts." She adds that with printouts of the simulations and experiments, students can do additional measurements and calculations.

Schools with the necessary hardware (a Terak microcomputer) can purchase these physics simulations for $20—the cost of the floppy disk containing the program.

Computers individualize learning, increase motivation

The computer is only one of many instructional tools, but it has features that other tools don't have.

"Interaction, immediate feedback, reinforcement, recordkeeping—these are things that tools like textbooks and filmstrips can't provide," says Edwards. "And while some children work with the computer," she adds,

"Any teacher worth his or her salt knows that what teachers do in the classroom, no computer can ever replace."

"others can receive more individualized attention from the teacher."

Individualized instruction, say computer advocates, is one of the biggest advantages of using computers. Children working with the computer proceed at their own rate and interact with the computer on an individual basis, even being addressed by name. Slower learners get the extra help and practice they need, while faster learners often proceed far beyond their grade levels in some subjects.

Furthermore, the computer can keep detailed records of each individual child to assist the teacher in giving further help in an area where a child has a problem.

But perhaps the biggest plus for computers is the way they motivate students. They are just plain fun to work with. Reports of students coming early to school or staying late to work with computers are commonplace, says Edwards.

These motivational powers certainly contribute to the computer's effectiveness as an instructional tool. Some research studies on computer effectiveness, most involving the larger systems, show that students using computer-assisted instruction score higher on achievement tests than their counterparts in more traditional modes of instruction.

"A few studies report no difference in achievement," Edwards notes, "but I'm not aware of any that report a negative effect."

A major long-term study in Los Angeles involving over 5,000 elementary students demonstrated that those using computer-assisted instruction made greater achievement gains than those who did not. This study, done by Educational Testing Service of Princeton, involved programs developed by Computer Curriculum Corporation of Palo Alto, Calif.

Another study involved the PLATO mathematics curriculum used in 15 Illinois classrooms, grades four through six. In a report of the study, researcher Robert Davis states that large achievement gains were made even after only one year of instruction. Many of the children in the study moved up the equivalent of three or four grade levels in mathematics.

"The attitude data are equally positive," reports Davis, who is associate director of the Computer-Based Education Research Laboratory. "Pupils were enthusiastic about the mathematics lessons, many students sought extra lessons, their attitudes toward mathematics improved, and so did their attitudes toward their own ability to deal with mathematics."

These studies, however, are based on specific computer-assisted programs. Edwards cautions that the diversity of computer use in schools is as great as the diversity of television programs. To judge the effectiveness or quality of computer-assisted instruction based on one program would be like judging the quality of television based on one show.

System manages classroom tasks

As useful as they are for instruction, computers can in no way replace teachers, Edwards insists. "Any teacher worth his or her salt knows that what teachers do in classrooms, no machine can ever replace. The computer's function in instruction is to assist and support the teacher."

Computers can also assist teachers with classroom management tasks — tasks such as diagnostic testing, prescription, and recordkeeping.

The Wisconsin Research and Development Center for Individualized Schooling has developed a microcomputer system for managing classroom instruction that works for any objective-based curricular program at the elementary or secondary level. Teachers can use the system to score tests or keep detailed records on the grades and progress of individual students. It even recommends how teachers might group students for certain instructional activities, based on the prerequisites students have met.

"We've found that teachers really like it because it helps them in their planning and cuts down on clerical time," says Donald McIsaac, coordinator of the Wisconsin Center's Computer-Managed Instruction project. "They can generate detailed pupil progress reports for parents, broken down by specific learning objectives."

A diagnosis and prescription program is currently being developed for the system.

The system, which works on an LSI-II microcomputer, is capable of managing up to 37 curricular areas, and it holds up to 250 grades and records for each of 800 students. It is designed to be used by one building, but McIsaac reports that some districts have found they can operate several schools on one microcomputer. For example, the Danville (Ill.) School District uses one microcomputer to manage an objective-based reading program in all 13 of its elementary schools.

"The most significant impact of this

Judy Edwards

"(Computers) can generate detailed pupil progress reports for parents, broken down by specific learning objectives."

system will be in special education, where teachers are required to keep detailed records," says McIsaac.

Like programs for computer-assisted instruction, this system helps teachers individualize. With detailed records on individual performance always available, teachers can see exactly where a student needs help.

Problems complicate use

Despite the great potential of computers, some problems must be overcome to ensure their successful use in schools.

An immediate concern is training teachers to use computers effectively in their classrooms. This means they must learn not only to use the equipment, but also to integrate computer lessons with other types of instruction.

"The biggest concern teachers have about computers is that they are going to have to learn a new skill on top of their already heavy workloads," says Edwards.

And until recently, teacher education institutions haven't done much to help.

"Schools of teacher education are finally becoming aware of the need for training in computers, and they're starting to offer courses at both the preservice and inservice levels," Edwards notes. "But they are going to have to do a lot more."

The Wisconsin Center is conducting a study to determine which types of inservice programs are most effective in training teachers to use its computer-managed instruction system.

Teaching students to use computers is much less involved, but factors such as age still must be considered. In a study at Far West Laboratory, researchers are looking at what it takes for students to be ready to use computers.

Standardization among hardware and software is also a problem, Edwards notes. Certain programs can only be used with certain computers, and school districts have to be careful to match their hardware and software.

Further complicating the use of computers in schools is the lack of guidelines for using programs and instructional materials. Edwards points out that many available programs offer little or no support materials or information on their use.

Clearinghouse offers help

"The MicroSIFT clearinghouse is designed to protect teachers from being stuck with a system they don't know how to use," says Edwards. "If a program doesn't tell the user what is expected, it shouldn't be used."

The clearinghouse will provide information about existing programs and software packages by reviewing, testing, and evaluating such materials.

Providing the necessary information will involve doing some "product finishing," Edwards explains. That is, clearinghouse staff will review products, then write guidelines and support materials in cases where none exist.

The emphasis will be on programs developed in the public domain — by teachers, school districts, and federally funded projects.

"Probably 10,000 teachers are writing their own programs," says Edwards. "These programs are useful for them, but they are not transferable to others because there are no written guidelines or support materials."

The clearinghouse will also coordinate the review of commercially available materials.

"Our top priority is to develop an evaluation model," says Edwards. "We are developing criteria to determine whether a product is useful and does what it says it does. Programs and software included in the clearinghouse will have to meet certain standards and requirements. Our emphasis will be on the distribution of high quality software."

The MicroSIFT clearinghouse will begin to provide services in September 1980. It will be coordinated by Donald Holznagel, with significant input from the staff of CONDUIT, the Iowa-based clearinghouse for software for higher education. Inquiries can be addressed to MicroSIFT, Computer Technology Program, NWREL, 710 S.W. Second Ave., Portland, OR 97204.

Information about specific programs described above can be obtained from:

Donald McIsaac, coordinator
Computer-Managed Instruction
Wisconsin Research
and Development Center
for Individualized Schooling
University of Wisconsin
Madison, WI 53706

Audrey Champagne, research associate
Learning Research and Development Center
University of Pittsburgh
Pittsburgh, PA 15260

Robert Davis, associate director
Computer-Based Education Research Laboratory
University of Illinois at Urbana/Champaign
Urbana, IL 61801

R&D

DON'T SMILE UNTIL CHRISTMAS

NOTED RESEARCHER SUGGESTS WE LISTEN TO EXPERIENCED TEACHERS AND LEARN FROM THEIR OLD ADAGES

E. Joseph Schneider

Illustrations by Salvador Bru

Although separated from her by about 15 rows, I couldn't help but conclude that Secretary of Education Hufstedler probably shared my bewilderment.

We were among a couple of hundred people packed into a Washington, D.C. auditorium to listen to experts from the educational ranks predict what the 80s hold in store for us.

As we sat there, speaker after speaker talked about the critical need to do something either for or about teacher education. Strengthen the colleges of education . . . no, ignore them, they're hopeless . . . put the money into inservice education, where the teacher is . . . no, increase the dollars going into research, we don't know enough about teacher education to improve it.

Half way through the proceedings I fogged out. The speakers seemed to be as confused as I was. Inservice or preservice? More research or better dissemination of existing knowledge? A clever mix of all the above?

I walked out of the auditorium into the sunlight and headed directly to a Braniff Airlines ticket counter. I was determined to get some clarification, even if it meant a trip to Texas.

Researcher defends teachers

Now Oliver Bown isn't exactly what you'd call the angry young man of the educational research community. In fact, his colleagues generally describe him as one of the more easy-going professionals in the business.

But Bown was plenty angry with me when I asked him to explain why teachers resist change.

The director of the University of Texas Research and Development Center for Teacher Education didn't answer me right away. He simply sat behind his desk and fumed. Then he began fidgeting with his tie. And by then I knew Oliver Bown, professor of educational psychology and one of the country's foremost researchers on

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E. Joseph Schneider is executive director of the Council for Educational Development and Research.

teacher education was mad, really mad.

"Let me tell you something," he began, with both fists clenched in front of him, "it's a damn good thing teachers are resistent to change, as you put it. Because if they weren't, they might just foolishly adopt some of the garbage thrown at them by so-called educational innovators."

Assured that he had my attention, the researcher-administrator continued.

"Teachers have been given a bum rap for too many years because of their so-called resistence to change. Well, I've yet to meet any teachers who resisted help when it came at their request and responded to their concerns. What they do resist, and I don't blame them, is a lot of mandates and pressures for change that make their jobs tougher than they already are."

At this point I threw in a question. (A researcher, when he's good and mad, can be a real treat to talk to.) Are you suggesting that teachers would be wise to reject most of the inservice training programs offered them?

"That's exactly what I'm saying. Research work done by us and others shows that most inservice programs are generally ineffective. You simply can't go into a school building, gather together all the teachers, those with 6-months experience and those with 20-years experience, and give them a seminar on a topic and expect it to have much impact. Other inservice programs are even counterproductive. Some wizard will come along and train teachers to experiment with a new instructional approach. But frequently, the teachers devote so much class time trying to master the new technique that they actually end up reducing the hours spent engaged in teaching."

What about preservice education, I asked, firmly convinced that inservice training was no panacea.

Now Bown was uncomfortable. I could hardly blame him. After all, he was being asked to talk about his colleagues, his own college of education, and perhaps even about himself.

Profession changes little

"Alright," he began, "I'm critical of the teacher education profession. In the last 10-15 years there's been little change in the profession, despite all the attention and criticism it has received."

We generally don't let college students do their student teaching until their last semester. Then we immediately dump them into the classroom. That's a mighty deep plunge.

But, Bown instructed, understanding teacher education requires knowing something about the environment in which it operates. You mean appreciating how colleges and universities function? I asked.

"Exactly. Let's start with a short discussion of the credit-hour system," he said. "If a university requires anywhere from 120-130 hours of course work to receive a bachelor's degree, its college of education probably gets only 24-36 hours to make teachers out of college students.

"Now let's look at how those 24-36 hours are spent. Every single discipline in the college of education believes it needs more of the student's time. Some of this concern is legitimate. That is, some faculty really believe that students need more exposure to educational psychology, or special education, let's say, than the normal curriculum offers. But in all honesty, many faculty argue for more of the students' credit hours simply to maintain the status or size of their department or, in some cases, to ensure the employment of the faculty."

Talking about his own discipline, Bown explained that future teachers trained at the University of Texas receive only one course in educational psychology. "Obviously, we have to give them a watered-down summary of a vast field of study."

Bown went on to explain, though, that a whole flock of faculty at Texas and elsewhere argue that the student-teaching time is the most critical element in the program. Consequently, the entire faculty is constantly pressured to drop required courses to provide the students with more time to learn the business in an actual classroom.

Student teaching is the most important part of the teacher-training process, agreed Bown. But it, too, has its faults.

"We generally keep the college students out of the elementary-secondary classrooms until their last semester in school," explained Bown. "Thus we encourage them to play the role of teenager/student, if you will, and then we immediately dump them into a classroom where we expect them to perform as an adult/teacher. Believe

me, that's a plunge off a high cliff into a mighty dark, cold pool of water."

So what's being done about it? I ask.

"Very little, unfortunately. The teacher-training profession has given little thought to creating a truly integrated system that maximizes the student's learning."

Some Faculty do well

Bown didn't appear to be enjoying the conversation. But he was too far into it not to finish making his point.

"Listen, don't get me wrong," he insisted. "I'm not saying that all our future teachers leave college poorly prepared. For one thing, the quality of our entering students has been higher recently. Consequently, the new crop of teachers starts out with certain advantages. Second, we have some excellent faculty members. And to the extent these professors have the time and interest to work with their students, they potentially receive a good orientation to the profession."

But even when Bown works hard to find something good to say about teacher education, he generally finds himself concluding his comment with a criticism.

"There's no question about it, we have many fine teacher trainers in our colleges and universities, but by and large they are not working together," concluded Bown. "In fact, faculty members seldom even talk to one another. Even within a discipline, different professors teaching the same course do it in isolation of each other."

Okay, I began again, if I'm the secretary of education looking for ways to improve the training of teachers, it sounds to me as if I might be well-advised to put my money into something other than preservice education.

Bown paused again, a long pause. Then he said an investment in inservice education will have greater payoff. But he said it with so little enthusiasm I followed up my comment by asking what he believes would be the best way to prepare teachers.

"Well, let's talk again for a minute about preservice. If I had my way, we would allow our future teachers to get their undergraduate degree out of the way before introducing them to a program leading to certification," he suggested. "One way of doing this would be by offering a fifth year degree program, or perhaps by requiring an M.A. degree for certification."

Good teachers don't tolerate or ignore their students' inappropriate behavior from the first day of school on.

Bown conceded that there will be resistence to the idea of an extra year, particularly from school districts opposed to paying proportionately higher salaries for better-educated and trained teachers.

But this concern only rankles Bown. "If this country wants the kind of teachers it's demanding, then it must allow them some professionalism. And that comes from extra training. Right now I don't see them getting it in a four-year curriculum. A fifth year isn't a panacea, but it's a step in the right direction."

Okay, I suggested, that's one way of strengthening preservice education. But I don't get the impression that it will make all that much difference. Besides, for better or for worse, the teachers of the next decade are already in the classroom teaching; that is, there's certainly a strong argument to be made for working more with the teachers already employed than with those still thinking about joining the profession. And that's where inservice education gets its boosters. But you appear sour on inservice. Where does that leave us?

"Why not go with what we already have in abundance?" asked Bown. "The good, experienced, classroom teacher."

The older, experienced teacher, the one every principal can identify, is an overlooked resource, claimed Bown.

"We've found, time and time again, that when our research identifies a superior way of instructing children, the better teachers are already using it," said Bown.

Smile after Christmas

For example, he went on to explain, most of the better, experienced teachers will tell a new colleague not to smile until Christmas. What they're saying, of course, is that teachers must maintain strong discipline in classrooms until their students know for sure who's in charge.

"Well, we always understood the reasoning behind this conventional wisdom," explained Bown. "But we never did any research to support our hypothesis."

Recently, however, a Texas Center research team headed by Carolyn Evertson conducted an indepth observational study of how teachers organized and managed their classrooms. The researchers started with the teachers on the first day of school and followed them throughout the year.

"Evertson and her team learned," said Bown, "that successful teachers actually arrange to prevent problems from occurring. And they do this by establishing useful routines early in the year."

The researchers subsequent studies confirmed the early one: the more effective teachers have a workable system of rules and procedures that they teach to their students during the first several weeks of school. Not only that, but it's possible to observe a teacher's behavior during the first couple weeks and predict with considerable accuracy the effectiveness of that classroom for the remainder of the year.

In other words, explained Bown, good teachers don't tolerate or ignore their students' inappropriate behavior from the first day of school on.

Okay, that's sensible. But what does the research say to the district superintendent, or building principal, or even the teacher center director?

"If I were one of them," began Bown, "I'd use my scarce resources to form a team to work with my new teachers during their induction period. On that team I'd put a few of my effective, experienced teachers, a qualified teacher educator with inservice-training skills, and a seasoned classroom researcher. And I'd be darn sure to get a researcher familiar with the concerns of teachers."

A training program, continued Bown, that adequately addresses new teachers' concerns and problems early in the school year will continue to pay off all year long.

"I'm not going to say that such an induction session will cure all the ills of education," Bown said as an understatement. "But I believe many of the problems that plague classroom teachers could be eliminated or greatly reduced. And when that occurs, they can get down to the serious business of teaching kids.

"In other words," continued Bown, "if the teachers are taught to eliminate classroom distractions, increase their students' ability to understand instructions, and generally manage the classroom better, they'll have more time available for instruction. And that," concludes Bown, "results in greater student achievement."

A training program that addresses new teachers' concerns and problems early in the school year will continue to pay off all year long.

Oliver Bown

Pieces come together

The interview was winding down and Bown appeared ready for a summary statement.

"I don't want you leaving here feeling glum about my profession. Sure, progress has been slow. But we've only been doing research in this field for about 20 years. Nevertheless, in the past three years productivity has increased markedly. Now I can see the bits and pieces of our research beginning to fit together."

For example, cited Bown, work at his center and elsewhere has linked student outcomes to classroom practices. Consequently, researchers are now able to develop the kinds of materials and procedures that facilitate the classroom organizational patterns, teacher-pupil interaction procedures, and teaching behaviors that increase student achievement.

Also, studies conducted by colleague Gene Hall and others are showing the research community how to make teachers full partners in the change process rather than victims of it.

This latter work, maintained Bown, will enable researchers to make a much quicker transfer of their findings into practice.

"Before too much longer," added Bown, "you'll notice the bulk of our research work impacting on practice rather than simply filling an academic journal."

Rising to his feet, Bown concluded the interview with a half smile.

"Who knows, we might even influence some of Secretary Hufstedler's circle of advisors. Why, in my less lucid moments I can almost imagine them citing our profession's accomplishments instead of the usual litany of its failures."

To learn more about the Research and Development Center for Teacher Education, its programs and publications, write Communication Services, RDCTE, University of Texas, Education Annex 3.202, Austin, TX 78712. R&D

R&D OUTCOMES

KIT HELPS PARENTS AND TEACHERS TAG PROBLEMS

An easy-to-use kit assists parents and teachers in identifying potential student problems. Designed by Southwest Educational Development Laboratory (SEDL), the School/Home Observation and Referral System (SHORS) is packaged for use in a classroom of up to 30 students, ages 3-8.

"Very often problems are not recognized until a child falls behind in school, develops behavior problems, or shows other kinds of stress," notes Joyce Evans, director of the SHORS project. "If problems are identified much earlier, the child can be referred for professional help before a pattern of failure begins."

SHORS is based on a cooperative arrangement between the teacher and the child's parents. The kit includes parent guides that contain a brief checklist for parents to complete on their child's health and behavioral history; an outline of common childhood problems; an explanation of the SHORS program; and a guide to resources for parents of children who need special help.

Teachers use both general and specific observation and referral checklists to record a continuous history of observations, parent conferences, and follow-up information for each child. The general checklist is used to keep track of such information as medical history, immunization dates, common physical symptoms, and behavioral signs of problems. If a pattern of difficulties is noted, then one of the kit's specific checklists is used.

The checklists cover seven areas: health, motor activities, vision, hearing, speech and language, learning, and behavior. Each list provides a detailed breakdown of characteristics to help adults focus on the exact nature of the child's problem.

The behavior checklist, for example, includes sections for recording four types of behavior: frequent, extreme, unusual, or unpleasant behavior; inability to get along with others; sudden changes in behavior; and other observations. The first section lists 14 examples of frequent, extreme, unusual, or unpleasant behavior such as tantrums, anger, tenseness, sleep problems, and crying. The other sections are similarly detailed. Thus, the checklists can serve

to convey objective information if the child is referred to a specialist for comprehensive evaluation.

School/home orientation materials that present an overview of the program for teachers and parents are available in two slide/tape presentations. For further information, contact Lorin Lentendre, CTB/McGraw Hill, Del Monte Research Park, Monterey, CA 93940.

NATURAL SKILLS OFFER KEY TO BETTER PROBLEM SOLVING

Children might be better at solving mathematical problems if teachers capitalized on the youngsters' intuitive problem-solving skills.

That's one conclusion of a study by three math education researchers at the Wisconsin Research and Development Center for Individualized Schooling, University of Wisconsin — Madison. The researchers are Jim Moser, Tom Carpenter, and Jim Hiebert (now at the University of Kentucky).

In the study 43 first-graders who had not yet received instruction in formal arithmetic computation were asked to solve a number of verbal problems representing basic addition and subtraction computations. Most of the children were able to work the problems correctly, and they used a variety of strategies to do so.

The strategies the children used were based on their analyses of the problems, an approach older children are less likely to take, according to Moser.

"When older children are faced with verbal problems," Moser says, "they often look for a rule to apply the computational skills they've been taught. They are less prone to think through a problem than an untutored child."

The researchers believe that because symbolic addition and subtraction are now taught prior to verbal problems, children have no basis for using their natural intuition to solve verbal problems.

"In other words," Carpenter says, "children's natural problem-solving skills are bypassed. That may result in a poor understanding of addition and subtraction as well as a decline in general problem-solving ability."

The authors of the study suggest that children might be taught to be better problem solvers if schools changed both the pattern and emphasis of math instruction, teaching verbal problems first and using them as a basis for teaching symbolic addition and subtraction later.

The study is part of a three-year analysis of how children learn beginning mathematical skills; it is funded by the National Institute of Education. More information is available from Jim Moser at the Wisconsin Center, 1025 W. Johnson St., Madison, WI 53706.

HIGH/SCOPE RELEASES PRESCHOOL MANUAL

High/Scope Educational Research Foundation announces the release of a new handbook from its Preschool Department. *Designing, Leading and Evaluating Workshops for Teachers and Parents* is a practical manual for those planning and conducting workshops for parents and teachers at preschools. The volume also describes follow up strategies to help participants apply workshops ideas in their own classrooms or homes.

The handbook can be ordered for $6 from Nancy Brussolo at High/Scope, 600 N. River St., Ypsilanti, MI 48197.

STUDY PINPOINTS WAYS TO IMPROVE SKILL-BASED READING PROGRAMS

A study of schools using a skill-centered reading program identifies six common problem areas and makes suggestions for improvement.

The study was conducted by the Wisconsin Research and Development Center for Individualized Schooling, University of Wisconsin — Madison. Researchers interviewed staff members in 16 schools and carried out extensive field investigations in four of them. The schools all use the Wisconsin Design for Reading Skill Development, a skill-centered approach developed by the Wisconsin Center. But according to the researchers, the study's findings apply to other skill-based programs as well.

The six problem areas identified by the researchers are:

- ☐ coordinating the skills program with the rest of the reading program;
- ☐ scheduling student skill groups and teacher planning time;
- ☐ providing staff leadership;
- ☐ striking a balance between too many and too few tests;
- ☐ establishing cooperative relationships among teachers to facilitate instruction; and
- ☐ teaching children to apply the skills they learn.

A report of the study suggests specific ways to handle each problem area through improved daily practice or inservice activities.

Copies of the 125-page report, *A Description of the Procedures Used in Implementing an Objective-Based Reading Program in Four Schools* (Technical Report 503), are available for $4.50 from Center Document Service, 1025 W. Johnson St., Madison, WI 53706.

CAREER ACTION PACKET AIDS STUDENTS, GRADES 6-9

A *Career Action Packet*, developed by Northwest Regional Educational Laboratory (NWREL) for McDonald's (Hamburger) Corporation, allows teachers to incorporate career education concepts into middle and junior high school curricula.

The *Action Pack* includes both a teacher's guide and activities for students, including ditto masters. Exploration activities use the community as a resource for learning. Application activities allow students to relate subject-matter knowledge and skills to careers.

The materials are organized into three units of three topics each: Language Arts — journalism, radio, and telephone; Mathematics — banking, personal finances, and stock market; and Social Studies — community geography, municipal government, and local laws.

Each unit helps students recognize the contribution of formal education to work; become familiar with careers; and understand better their own personal characteristics.

The *Action Pack* was developed by Robert Blum, NWREL Education and Work Program, and Carolyn Raymond, Apache Junction Schools, Ariz. It can be ordered for $3 from McDonald's Corporation, Box 14317, Dayton, OH 45414.

"When you start hearing Barbara Walters talking about mass murder like it's a batch of oatmeal cookies, it's going to affect you."

—California high school student

"They call television a medium because nothing on it is ever well-done."

—Fred Allen

NEW MATERIALS TEACH TELEVISION VIEWING SKILLS

Two educational laboratories have developed materials to teach students critical television viewing skills. One laboratory project focuses on elementary school children, while the other includes a text for high school students. Both are funded by the U.S. Office of Education.

SEDL develops K-6 materials

The Learning and Media Research Division of the Southwest Educational Development Laboratory (SEDL) has developed materials for elementary school children, their families, and their teachers.

The children's materials consist of *The Frog Fables, The Suzie Stories,* and the *TV Discovery Game.* These items introduce television terms and programming techniques, and encourage children to be selective in their viewing.

A series of newsletters, *Television: A Family Focus,* offers resources for parents. Articles include summaries of research on children and television, television games, and other activities for the entire family. The articles can be reprinted or adapted for use by parent organizations.

Teacher materials consist of *Teacher Cue Cards* that offer ideas for activities and discussion using television programming as a stimulus. In other words, the cards help teachers relate television viewing to existing school curriculum.

SEDL staff members are offering a series of workshops to train adults to effectively use the materials with children.

A sample packet of these materials is available for $18.75: a training manual; five newsletters; five stories; a *TV Discovery Game;* a television log; and *Teacher Cue Cards.* Materials are also available in bulk quantities at cost.

To order a sample packet, or to find out more about the materials and workshops, contact Office of Communications at SEDL, 211 E. 7th St., Austin,TX 78701.

FWL prepares high school text

Far West Laboratory (FWL) has developed a concise *Family Guide to Television,* and a high school text called *Inside Television: A Guide to Critical Viewing.*

The guide offers games, quizzes, and astonishing facts about the industry and the "TV habit." It's available free from Consumer Information Center, Pueblo, CO 81009 (catalog #5154H, "Children & TV").

The text provides material for a one-semester course covering the art, industry, persuasive messages, and effects of television. Available shortly for purchase, the book can be divided into independent units suitable for courses in English or social studies. Its purpose is to help students draw their own conclusions about television's role in their lives while they're learning to appreciate and criticize the medium.

FWL staff offers workshops at professional education and community service meetings to introduce critical television viewing skills and share resources. Some 200 educators and community leaders have received leadership training so they can provide staff development opportunities for their colleagues back home.

For information about the curriculum materials or staff development, write Critical TV Viewing, Room 7, FWL, 1855 Folsom St., San Francisco, CA 94103.

CLASS SIZE AFFECTS STUDENT ACHIEVEMENT

Reduction in class size is associated with high quality schooling, increased achievement, and more positive student attitudes. That's the conclusion of a study recently completed by the Class Size and Instruction Project, Far West Laboratory (FWL).

The effects of reducing class size were related to age of pupils, with effects most notable for children 12 years old and under, and least apparent for students 18 or over. The study indicates that reducing class size benefits both academic achievement and student attitudes as well as the teaching process itself.

Mary Lee Smith and Gene Glass conducted the study, which involved a statistical integration of existing research—a technique called "meta-analysis."

The researchers conclude that class size affects the quality of the classroom environment. In smaller classes, the climate is likely to be friendlier and more conducive to learning, with more direct personal involvement of students. Furthermore, many teachers take advantage of the opportunities a small class offers to adapt learning programs to individual needs. And with more time to plan and diversify, teachers are more satisfied with their own performance.

The Class Size and Instruction Project is supported by the National Institute of Education. *Relationships of Class Size to Classroom Processes, Teacher Satisfaction, and Pupil Affect: A Meta-Analysis* is available for $5.50 from Order Department, FWL, 1855 Folsom St., San Francisco, CA 94103.

R&D HAPPENINGS

PUBLICATIONS COVER WOMEN AND EDUCATION

The Women's Educational Equity Communication Network, Far West Laboratory (FWL), offers information and services focused on women and education. Several new publications are available.

One document, *Finding Funds for Programs Relating to Women's Education Equity,* provides an overview of funding sources. It can be purchased for $2.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402; order number 017080-01835-7.

A second set of materials, *Developing Successful Proposals in Women's Educational Equity,* offers indepth information on developing grants and projects. The set includes: "The Guide" published in both English and Spanish; "The Supplement;" and "The Swipe File." The three volumes can be ordered as a set for $13.50, plus $2.50 handling charge, from Order Department, FWL, 1855 Folsom St., San Francisco, CA 94103.

A reference publication on women and education, *Resources in Women's Educational Equity,* provides a comprehensive list of materials from many data bases. Citations give author, title, corporate source, availability information, descriptors, and abstract. Two volumes, containing a total of 3,510 citations, are available for $7.25. Order from Women's Educational Equity Communications Network at FWL (address above).

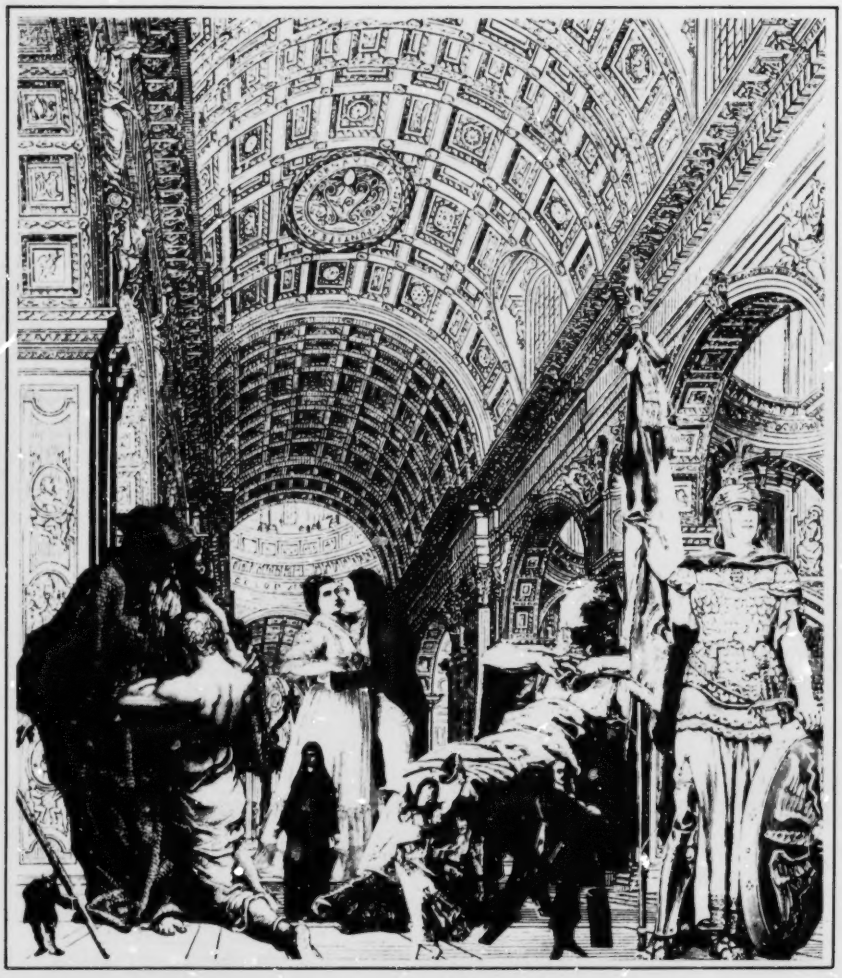
The Network is funded by the U.S. Office of Education.

OHIO CENTER HEADS CAREER GUIDANCE CONSORTIUM

A three-agency consortium is helping communities plan, operate, and evaluate their own career guidance programs.

The effort is headed by the National Center for Research in Vocational Education, Ohio State University. The two other cooperating agencies are American Institutes for Research and the University of Missouri, Columbia.

The Guidance Team Training Program encourages local public and private organizations to work to-



gether to develop a career guidance program that meets community needs. More than 50 local teams, composed of persons from education and other community agencies concerned with career guidance, are participating in the program.

In addition to managing the project, the National Center will be involved in revising program materials, training local teams, and providing them with technical assistance as they implement their programs.

The project is funded by USOE's Bureau of Occupational and Adult Education through September 1981.

For more information, contact Harry Dreier, project director, at the Ohio Center, 1960 Kenny Rd., Columbus, OH 43210.

CEMREL DESIGNS HUMANITIES EXHIBIT

The Humanities Experience: The Subject is You is the title of a traveling participatory exhibit being developed by CEMREL, the St. Louis-based laboratory.

Designed for 10 to 18-year-olds, the exhibit describes humanistic thinking and behavior through use of modular design. The content, presented in a format capable of touring the country, is drawn from western, non-western, contemporary and ancient sources.

The exhibit consists of four sections: a multimedia introduction; a print-sound exploration of five humanistic themes — faith, justice, truth, beauty, and love; visitor participation activities; and a gallery-presentation area featuring the work of contemporary humanists.

Scheduled for completion in October 1980, the exhibit is funded by a grant from the National Endowment for the Humanities.

For more information on *The Humanities Experience: The Subject is You,* contact Edward Sweda, CEMREL, 3120 59th St., St. Louis, MO 63139; 314/781-2900.

RESEARCH ORGANIZATIONS RELEASE PRODUCT CATALOGS

Two regional educational laboratories and an r&d center have released 1980 catalogs that describe their products and services.

Northwest Regional Educational Laboratory (NWREL) has issued its *Products and Services Catalog.* The 26-page publication lists products and services in eight areas: adult education; career education/experimental learning; competency based education; computer technology; evaluation, testing, and assessment; instructional and goal development; multicultural and non-sexist education; and organizational training and administration.

The catalog also includes ERIC listings and a product index. Copies can be obtained from the Office of Marketing at NWREL, 710 S.W. Second Ave., Portland, OR 97204.

Southwest Educational Development Laboratory (SEDL) has released a *Publications List.* The 38-page booklet provides titles and brief descriptions of curriculum materials, research reports, conference proceedings, and other publications in 16 content areas.

For copies, contact the Office of Communications at SEDL, 211 E. 7th St., Austin, TX 78701.

The *Catalog of Publications* is available from the Research and Development Center for Teacher Education, University of Texas. It describes the Texas Center's history and mission as well as the projects in its three research divisions.

The 87-page catalog also includes a listing of products, technical reports, research and conceptual papers, and books from current as well as previous projects.

For copies of the catalog, contact Communication Services at the Texas Center, Education Annex 3.203, Austin, TX 78712.

BIBLIOGRAPHY COVERS ADULT FUNCTIONAL LITERACY

A new resource is available for researchers, practitioners, and policy makers concerned with adult functional literacy. Northwest Regional Educational Laboratory (NWREL) has published *A Bibliographic Guide to Functional Literacy.*

Developed by the staff of the NWREL Functional Literacy Project, the guide is divided into five major chapters: Literacy Policy, Definitions and Measurements, Adult Literacy Education, Determination of Literacy Requirements, and Consequences of Literacy. Each chapter provides an overview of major issues and references. Selected articles are then cited and annotated, and descriptions of how each article fits into the chapter's topic focus are provided.

Copies of the guide are available for $6.50 from the NWREL Clearinghouse for Applied Performance Testing, 710 S.W. Second Ave., Portland, OR 97204. Both the Functional Literacy Project and the Clearinghouse are supported by funds from the National Institute of Education.

DOCUMENT LISTS EDUCATION DATABASES AND CLEARINGHOUSES

A comprehensive listing of computerized information resources in education is available from the National Center for Research in Vocational Education, Ohio State University.

Databases and Clearinghouses: Information Resources for Education lists 54 data collection systems that can be searched by computer and 30 clearinghouses.

The clearinghouses are all organizations that respond personally to information requests; provide referral and brokerage services for information and technical assistance; prepare bibliographies to meet special needs; and publish commissioned papers, and research and technical reports.

The catalog is available for $9.95 form the Publications Office at the Ohio Center, 1960 Kenny Rd., Columbus, OH 43210.

R&D TRAINING

KIT GUIDES EDUCATORS THROUGH EVALUATION STEPS

A set of practical, how-to-do-it program evaluation materials has been published by the Center for the Study of Evaluation, University of California, Los Angeles.

Each book in the eight-volume *Program Evaluation Kit,* covers one topic and provides step-by-step instructions on how to plan and manage an evaluation. The kit is designed especially for educators who have never before conducted an evaluation. Individual volumes are:

- ☐ Evaluator's Handbook ($8.50)
- ☐ How To Deal with Goals and Objectives ($4.50)
- ☐ How To Design a Program Evaluation ($7.50)
- ☐ How To Measure Program Implementation ($6.95)
- ☐ How To Measure Attitudes ($7.95)
- ☐ How To Measure Achievement ($7.50)
- ☐ How To Calculate Statistics ($8.50)
- ☐ How To Present an Evaluation Report ($4.50)

Authors are Lynn Morris, Carol Fitzgibbon, and Marlene Henerson. Development was funded by the National Institute of Education.

The price of a complete kit is $49.95, or $45 prepaid. To order the kit or individual books, contact Sage Publications, P.O. Box 5024, Beverly Hills, CA 90210.

SERIES DOCUMENTS SCHOOL IMPROVEMENT PROCESS

A new series of publications describes how to use research and development results to improve local school practice.

Developed by The Network, the publications are the product of a three-year project funded by the National Institute of Education. The effort involved engaging in cooperative problem solving with 30 local schools to help them plan and implement improvements. Linking agents in intermediate units, state education agencies, and other organizations worked with the schools' staffs to help them bring r&d resources to bear on identified needs.

These publications document the improvement process and offer suggestions for others:

☐ *The Linking Agent's Tool Kit* ($35) is a three-volume set of resources for people involved in selecting and implementing new educational programs in schools. Intended as a resource for linking agents, the set is useful for school-based planners working with a linking agent or those following a rational problem-solving process to improve schools.

☐ *Case Studies in Program Improvement* ($10) describes six local school improvement efforts and analyzes common issues across the six cases.

☐ *The "Inside" Outsiders: A Study of Three Consortium Linking Agents* ($10) analyzes the prior experiences of three linking agents, documents their work, and explains how they became important partners in school improvement.

☐ *Reflections on the Experience of Educational Linking Agents* ($10) is a series of papers written by linking agents and their supervisors. The papers deal with the linking agents' role, their work with school sites, and the support they received.

☐ *The Consortium Project: A Study in Interorganizational Collaboration* ($7) is a final report that presents a history of the three-year effort.

Cost of the complete Consortium Report Series is $60. For additional information or to order one or more volumes contact The Network, 290 S. Main St., Andover, MA 01810; 617/470-1080.

GUIDE OFFERS TIPS ON SCHOOL-COMMUNITY RELATIONS

A new practical, research-based guide describes how to develop a model school-community relations program.

Community Relations for Schools covers four elements of a community relations program: needs assessment, planning, implementation, and evaluation. Each element is discussed in a chapter illustrated with a case study. In addition, the guide contains 33 samples of such items as letters to parents, interview schedules, agendas for parent conferences, and evaluation forms.

The 150-page guide was prepared by the Wisconsin Research and Development Center for Individualized Schooling, University of Wisconsin — Madison, with funds from the National Institute of Education. Authors are M. Lynn Karges, a reading specialist in Janesville, Wis., and B. Dean Bowles, professor of educational administration and a member of the Wisconsin Center's associated faculty.

Published as Practical Paper 21, the guide is available for $4.75 from Center Document Service, 1025 W. Johnson St., Madison, WI 53706.

PUBLICATIONS FEATURE BASIC SKILLS TESTING AND COMPETENCE ASSESSMENT

Four new publications on basic skills testing and competence assessment are available from the Clearinghouse for Applied Performance Testing (CAPT), Northwest Regional Educational Laboratory (NWREL).

☐ *Direct Measures of Writing Proficiency: Issues and Applications* ($3.75). This monograph introduces writing assessment, and deals in a nontechnical way with measurement issues and general strategies for developing and using writing tests. Highlights include: the role of writing samples and objective tests in writing assessment; procedures for evaluating student writing; and results from a national writing assessment survey conducted by the Wisconsin Department of Public Instruction.

☐ *Guidelines for Selecting Basic Skills and Life Skills Tests* ($4.25). These guidelines cover evaluation and selection of published basic skills tests. Featured are: a nontechnical review of the characteristics of a "good test;" test evaluation issues including reliability and validity, and testing logistics; descriptions of 108 available tests; and 37 specific questions to ask about any test being considered for purchase.

☐ *Annotated Bibliography on Applied Performance Testing* (single copies free). The third edition of this publication is the result of a review of more than 2,000 documents; 10 percent of them were selected for inclusion based on quality and relevance criteria. In addition to a citation, abstract, and availability information, documents are characterized according to: the type of document, content area, skills tested, grade level, suggested users, and companion materials.

☐ *Alternative Conceptions of Competence Assessment* ($3.50). This publication documents proceedings of a CAPT conference on new developments in educational measurement.

These publications can be obtained from the NWREL Clearinghouse for Applied Performance Testing, 710 S.W. Second Ave., Portland, OR 97204. The Clearinghouse is supported with funds from the National Institute of Education.

SERIES FOCUSES ON SPECIAL LEARNERS

A series of publications helps teachers, counselors, and others improve services for special needs learners. Titled *It Isn't Easy Being Special,* the series is published by the National Center for Research in Vocational Education, Ohio State University.

Publications and their prices are:

☐ *Let's Get Acquainted: Attitudes Toward Special Needs Learners* (RD174, $1.90). Helps individuals overcome attitudinal barriers toward students with special needs.

☐ *Let's Find the Special People: Identifying and Locating the Special Needs Learners* (RD176, $3.25). Discusses how to determine program accessibility, assess performance, and conduct follow-up activities with special needs learners.

☐ *Let's Work Together: Intervention Strategies for Learners with Special Needs* (RD175, $3.25). Identifies strategies for teachers, administrators, counselors and parents to use in working with special learners.

☐ *Here are Programs That Work: Selected Vocational Programs and Practices for Learners with Special Needs* (RD177, $13). Provides a profile of 16 selected programs that meet the needs of special learners.

☐ *Resources: Agencies and Organizations That Serve Special Needs Learners* (RD178, $3.25). Lists resources for serving special needs students.

☐ *Resources: Materials for Special Needs Learners* (BB50, $8.75). Describes resource materials for 12 different types of special needs learners.

Publications can be ordered from National Center Publications, Ohio State University, 1960 Kenny Rd., Columbus, OH 43210.

MINI-LIST OF RESOURCES

ORGANIZATIONS OFFER RESOURCES FOR TEACHERS' CENTERS

Each issue of *Educational R&D Report* features a "mini-list" from the Resource and Referral Service at the National Center for Research in Vocational Education, Ohio State University. This issue covers selected resources for Teachers' Centers. Additional information on this topic may be obtained from the regional educational laboratory in your area or from the Resource and Referral Service at the address below.

AFT Teacher Center Resource Exchange
American Federation of Teachers
11 Dupont Circle
Washington, D.C. 20036
Contact: Pat Weiler, director
202/797-4461

The AFT Teacher Center Resource Exchange assists local AFT leaders, other teacher center leaders, and higher education personnel through training and resource-sharing activities. A free packet, mailed quarterly, consists of a newsletter and related resources and training information.

Three brochures developed by the AFT Resource Center are available from ERIC. Two describe federal support for and explore potential impact of teacher centers: *At Last, Teacher Centers That Are Really for Teachers* (1978, 10 pp., ED 162 977) and *Teachers' Centers. A New Voice For Teachers in Teacher Education Reform* (1978, 15 pp., ED 162 978). The other, *Teachers' Centers: Putting the Pieces Together for Success* (1978, 309 pp., ED 164 541), is a comprehensive guidebook for organizing a policy board and developing a teacher center proposal. This item can be ordered for $4 from AFT.

A teacher center "How-to Series" (July 1979) contains five modules. It presents ideas and techniques for operating teacher centers from those participating in the AFT Resource Exchange. Limited quantities are available free to prospective teacher center directors and policy board members. In addition, slide-tape presentations are available on loan.

The AFT Resource Center holds seminars and conferences at national, regional, and local levels. A clearinghouse offers an "idea exchange" and a "people resource bank" for local teacher center project activities. The effort is funded by the National Institute of Education.

Association of Teacher Educators (ATE)
1701 K St., NW
Suite 1201
Washington, D.C. 20006
Contact: Robert Stevenson, executive director
202/223-1068

ATE is a national, individual membership organization devoted to the improvement of teacher education for both school-based and campus-based educators. The Winter 1979-80 issue of ATE's quarterly journal, *Action in Teacher Education* (Vol. 2, Issue 1, $4 nonmembers, $2 members), focuses exclusively on teacher centers. Edited by Robert Schuck, the issue features articles that reflect the state-of-the-art in teacher center development.

National Council of States on Inservice Education (NCSIE)
Syracuse University
School of Education
123 Huntington Hall
150 Marshall St.
Syracuse, NY 13210
Contact: James Collins, director
315/423-4167

Funded through the U. S. Office of Education's Teacher Corps Program, NCSIE helps state education agencies (SEAs) examine, discuss, and disseminate information about inservice education goals, training materials, and strategies. The Council consists of SEAs and liaison representatives of professional associations and education agencies, including the Teacher Centers Program. An annual national workshop is conducted and monographs on selected inservice issues are published. A newsletter, *Inservice*, is available free.

Sources and Resources: An Annotated Bibliography on Inservice Education (1979, 313 pp., $4.50) is a comprehensive guide to inservice programs and activities, including those of teacher centers. Prepared by staff members of NCSIE, this publication is available from the National Dissemination Center at the above address. There is a $.60

charge for handling one copy, and $1 per order for multiple copies. A complete publications list is available.

NEA Teacher Center Project
National Education Association
1201 16th St., NW
Washington, D.C. 20036
Contact: Roy Edelfelt, director
202/833-4119

The NEA Teacher Center Project assists selected federally funded teacher centers, and cooperates with other projects and agencies. It is funded by the National Institute of Education through NEA's National Foundation for the Improvement of Education. Project activities include workshops and seminars, development and distribution of resource materials, and information clearinghouse services. A complimentary newsletter, *Notes*, describes current products and services. The following print materials are available free: *Teacher Centers and Advisory Work* (1978, 26 pp.); *Developing a Proposal for the U. S. Office of Education Teacher Centers Program* (1977, 45 pp.); and *Teacher Centers and Needs Assessment* (Fall 1979). Audiovisual materials include *A Teacher Center Is . . .*, an eight-minute sound filmstrip and booklet (1978, $15); and two audiotapes of 30-minute interviews with British teacher center wardens (tape, free on loan; transcripts, free on request).

Another NEA project has developed a reference guide of interest to teacher centers. *Descriptions of Inservice Education Training Programs and Supporting Resource Materials* is a 14-volume set containing 615 product descriptions. The set is available for $550; individual volumes (for example, Special Education, Classroom Management, Reading, or Motivation) may be ordered separately. A 10 percent discount is granted for prepaid orders. Contact NEA's Inservice Education Project at the above address for a sample product description and complete ordering information.

The National Teacher Center Resource Center
Rhode Island Department of Education
235 Promenade St.
Providence, RI 02908
Contacts: Margaretta Edwards, assistant director
Edward Damburch, director
401/277-6834

The Resource Center serves the information, technical assistance, and project dissemination needs of state teacher center coordinators. Workshops and training manuals have been developed for the coordinators but may also be useful to others. A newsletter facilitates the sharing of resources and strategies for assisting teacher center projects; complimentary subscriptions are available.

The Resource Center also maintains liaison and communication with other organizations involved in staff development and dissemination activities. A flyer describing the Resource Center is available upon request.

Phi Delta Kappa (PDK)
Eighth and Union
Box 789
Bloomington, IN 47402
Contact: Derek Burleson, special publications editor
812/339-1156

PDK, an honorary organization for educators, develops and distributes a series of "fastbacks" — easy-to-read booklets written by specialists on specific topics. One 1978 booklet, *Teacher Centers: Where, What, Why?* (No. 117, 30 pp.) by Roy Edelfelt and Tamar Orvell, uses a question and answer format to explore the role of teacher centers. Financing, staffing, governance, and planning are discussed.

Other booklets can serve as a source of topical readings for inservice programming. Individual fastbacks cost $.75 ($.60 for PDK members). Quantity discounts are available. For a complete list of publications, request the PDK publications catalog.

Syracuse Area Teacher Center
Syracuse University
School of Education
400 Huntington Hall
150 Marshal St.
Syracuse, NY 13210
Contacts: Sam Yarger, director
Sally Mertens, assistant director
315/423-3026

The Syracuse Area Teacher Center is funded by the U.S. Office of Education (USOE) to coordinate the documentation activities of USOE-funded teacher centers. Seven regional coordinators assist in this effort by conducting meetings and providing technical assistance.

To encourage individual teacher centers to undertake documentation activities, *Documenting Success: A Guidebook for Teacher Centers* was published in 1979. Written by Sam Yarger and Sally Mertens in conjunction with the New York State Education Department, this publication describes documentation strategies that can produce maximum information for program improvement with minimal staff time. To obtain a

copy or to find out about regional workshops, contact the Syracuse Area Teacher Center.

Teachers' Centers Exchange
Far West Laboratory
1855 Folsom St.
San Francisco, CA 94103
Contact: Barbara Piper
415/565-3095

Funded by the National Institute of Education since 1975, this project promotes exchange of information on teachers' centers by responding to inquiries, spotlighting and circulating ideas and resources, and arranging meetings.

The *Teachers' Centers Exchange Directory* (1980, $12.50 prepaid) describes in a common format the programs, resources, and staffing patterns of the 161 centers in contact with the Exchange. *Essays on Teachers' Centers*, edited by Kathleen Devaney (1977, $10 prepaid) is a collection of 12 essays that explore teacher-developed inservice experiences and support systems.

Building a Teachers' Center, also edited by Devaney, is a collection of 16 articles that gives firsthand accounts from educators who have been involved in starting teachers' centers. This book is distributed by Teachers College Press, 1234 Amsterdam Ave., New York, NY 10027 (1979, 292 pp., $8.95 plus $.75 postage; New York residents add applicable sales tax.)

The other publications can be ordered from the Teachers' Centers Exchange. In addition, an eight-minute slide show on teachers' centers is available on loan, and selected literature is distributed in response to individual requests.

Teacher Centers Program
Division of Educational Systems Development
U.S. Office of Education
1832 M St.,NW
Suite 819
Washington, D.C. 20202
Contact: Allen Schmieder, chief
202/653-5840

This office provides leadership and support for teacher centers. Official program regulations, application forms, and related funding information are available. Supervision by a policy board that includes a majority of teachers as members is a prerequisite for funding as a teacher center. Local education agencies and institutions of higher education are eligible for funding.

The Teacher Centers Program also supports and works closely with state education agencies. Each state and territory has designated a teacher center coordinator to supply information and technical assistance to teacher centers.

The Commissioner's Report on the Education Professions 1975-76 . . . Teachers Centers, prepared by Allen Schmieder and Sam Yarger, offers an overview of the teacher center concept and the organizations and activities involved in the movement. This 233-page document is available for $3.75 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, order number (OE)77-12012.

EDUCATIONAL R&D REPORT

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